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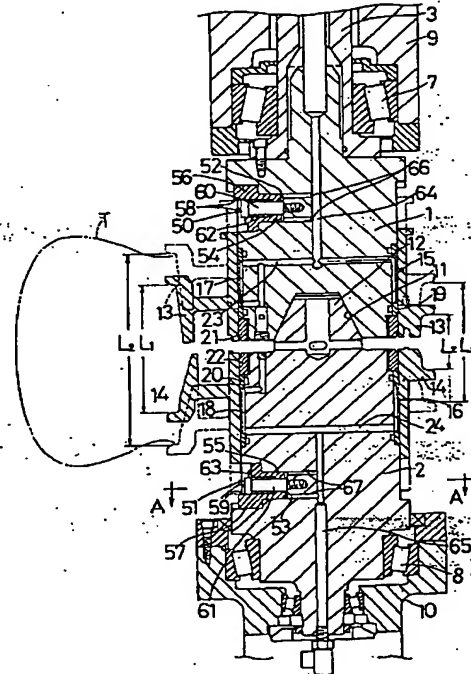
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(54)【発明の名称】 タイヤユニフォームティマシにおけるリム間隙設定装置

(57)【要約】

【目的】 上・下リムを上・下主軸に対して確実に固定し、試験中における上・下リム間のリム間隙の変動を防止する。

【構成】 上・下主軸1,2に、上・下リム13,14が上下動自在に套嵌されている。上・下主軸1,2には、上・下リム13,14を内周からロックする拡張リング19,20と、上・下リム13,14に係合する係合部を有するピストン54,55が設けられている。拡張リング19,20は圧油によって径方向に拡大して上・下リム13,14を上・下主軸1,2にロックする。ピストン54,55は拡張リング19,20の拡張に連動して径方向に動き、突出時に上・下リム13,14に係合する。



【特許請求の範囲】

【請求項1】 上下主軸(1)(2)の対向端部に、タイヤ(T)を装着する上・下リム(13)(14)を上下動自在に嵌着すると共に、上・下リム(13)(14)を内周からロックするための上・下油圧ロック手段(15)(16)を上・下主軸(1)(2)に設けたタイヤユニフォミティマシンにおいて、上・下油圧ロック手段(15)(16)と連動して径方向に出退し、上・下油圧ロック手段(15)(16)のロック時に上・下リム(13)(14)に係合する上・下油圧係合手段(50)(51)を上・下主軸(1)(2)に設けたことを特徴とするタイヤユニフォミティマシンにおけるリム間隔設定装置。

【請求項2】 上・下油圧係合手段(50)(51)は、上・下主軸(1)(2)に径方向に出退自在に設けられた周方向に複数個のピストン(54)(55)を備え、各ピストン(54)(55)に、上・下リム(13)(14)に係合する係合部(58)(59)を設けたことを特徴とする請求項1に記載のタイヤユニフォミティマシンにおけるリム間隔設定装置。

【請求項3】 上・下油圧ロック手段(15)(16)は、上・下主軸(1)(2)に径方向に出退自在に設けられ、かつロック時に上・下リム(13)(14)の内周側に当接する周方向に複数個のピストン(73)(74)を備えたことを特徴とする請求項1又は2に記載のタイヤユニフォミティマシンにおけるリム間隔設定装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、タイヤユニフォミティマシンにおけるリム間隔設定装置に関するものである。

【0002】

【従来の技術】タイヤユニフォミティマシンは、上・下主軸に上・下リムを介してタイヤを装着し、このタイヤを主軸の軸心廻りに回転させながらロードホイールを押当てて測定を行なうようにしている。このタイヤユニフォミティマシンにおいて、上・下リム間隔(L₁~L₂)を自動的に設定できる装置として、既に、図8に示すようなものが考えられている。

【0003】即ち、図8において、1は上主軸、2は下主軸で、これら主軸1,2は同一軸心上で上下に相対向するように、上・下支持軸3,4の対向端部にボルト5,6で取付けられている。上・下支持軸3,4は軸受7,8を介して軸受ケース9,10により回転自在に支持されている。そして、上支持軸3は図外の駆動モータにより軸心廻りに回転駆動され、また下支持軸4は軸受ケース10と共に図外の昇降手段により昇降自在に支持されている。上主軸1の下端には嵌合凹部11が、下主軸2の上端には嵌合突部12が夫々テーパ状に形成され、下主軸2を上昇させた時に両者が嵌合して連結されるようになっている。

【0004】13は上リム、14は下リムで、これらは上・下主軸1,2の外周に上下摺動並びに嵌脱自在に套嵌され、かつ内周側から油圧式の上・下油圧ロック手段15,16により任意の位置で固定されるようになっている。な

お、上・下リム13,14は、図8では左右に異種形状のものが示されており、この各リム13,14は実線位置と点線位置との間で上下に位置変更可能である。従って、この場合、上・下リム13,14間の間隙は、L₁からL₂の範囲で任意に設定できるようになっている。

【0005】上・下油圧ロック手段15,16は、内周に油室17,18を有しかつ拡張自在な拡張リング19,20により構成され、この拡張リング19,20は上・下主軸1,2に嵌着され、ナット21,22により固定されている。各油室17,18は油路23,24を介して上・下主軸1,2の中心部の油室25,26に連通され、その油室25,26にはエアシリンダ27,28のラム29,30が設けられている。

【0006】エアシリンダ27,28は、上・下主軸1,2に形成されたシリンダ室31,32と、このシリンダ室31,32に摺動自在に内嵌されたピストン33,34と、このピストン33,34に一体のラム29,30とにより構成されている。そして、ピストン33,34は、ラム29,30により油室25,26内の油を加圧すべくバネ35,36により付勢され、またこのバネ35,36に抗するようにエア圧を加えるべくエア室37,38が形成されている。エア室37,38はラム29,30等に形成された通路39,40から配管41又は通路42を介して図外のエア源に接続されている。

【0007】従って、各エアシリンダ27,28のエア室37,38のエア圧を抜けば、バネ35,36によりピストン33,34、ラム29,30が押圧され、油室25,26の油を加圧するため、油室17,18の圧力が上昇し、拡張リング19,20を径方向外方に拡大して上・下リム13,14を内周側からロック可能である。なお、ラム29はスリーブ43に套嵌されている。

【0008】44は係止アームで、軸受ケース9にピン45で揺動自在に枢着されている。そして、この係止アーム44は上リム13のフランジ部に係脱自在に係合する係合部46が下端部に設けられ、上端部に係脱操作手段が連結されている。上・下リム13,14は上・下油圧ロック手段15,16の拡張リング19,20を油圧によって拡大させることにより、上・下主軸1,2にその内周側からロックできる。そして、上・下リム13,14間のリム間隙をL₁~L₂の範囲内で設定可能であり、これによりタイヤサイズの変更に迅速に対応できるようになっている。

【0009】

【発明が解決しようとする課題】実際の試験では、タイヤT内に圧縮空気をを入れて走行時と同じ条件に設定される。このため上・下リム13,14には上下方向の力F₁・F₂が作用することになり、この力F₁・F₂はPCタイヤでは最大20tonにもなりうる。従って、拡張リング19,20を利用した上・下油圧ロック手段15,16のみでは、タイヤT内に圧縮空気を導入する時に上・下リム13,14がずれ、リム間隙が変わるという問題がある。この対策として、上・下油圧ロック手段15,16の固定力を強めることも考えられるが摩擦抵抗によるロック方式を採っている

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ため、構造上、限界がある。

【0010】本発明は、かかる課題に鑑み、リム間隙の設定位置で上・下リムを確実に固定し、リム間隙の変動を防止できる上・下リム間隙設定装置を提供するものである。

【0011】

【課題を解決するための手段】本発明は、上・下主軸1, 2の対向端部に、タイヤTを装着する上・下リム13, 14を上下動自在に嵌着すると共に、上・下リム13, 14を内周からロックするための上・下油圧ロック手段15, 16を上・下主軸1, 2に設けたタイヤユニフォミティマシンにおいて、上・下油圧ロック手段15, 16と連動して径方向に出退し、上・下油圧ロック手段15, 16のロック時に上・下リム13, 14に係合する上・下油圧係合手段50, 51を上・下主軸1, 2に設けたものである。

【0012】上・下油圧係合手段50, 51は、上・下主軸1, 2に径方向に出退自在に設けられた周方向に複数個のピストン54, 55を備え、各ピストン54, 55に、上・下リム13, 14に係合する係合部58, 59が設けられている。上・下油圧ロック手段15, 16は、上・下主軸1, 2に径方向に出退自在に設けられ、かつロック時に上・下リム13, 14の内周側に当接する周方向に複数個のピストン73, 74を備えている。そして、対する当接側にライニング、

【0013】

【作用】上・下リム13, 14を上下動させてリム間隙を調節し設定した後、上・下油圧ロック手段15, 16に圧油を供給してピストン73, 74を突出させる。するとピストン73, 74が上・下リム13, 14に内周側から当接し、この上・下リム13, 14を上・下主軸1, 2に内周からロックする。従って、上・下リム13, 14を上・下主軸1, 2に確実にロックできる。

【0014】この時、上・下油圧係合手段50, 51のピストン54, 55が、上・下油圧ロック手段15, 16に連動して突出し、そのピストン54, 55の係合部58, 59が上・下リム13, 14に係合する。従って、タイヤTに空気圧をかけても、上・下リム13, 14が上・下主軸1, 2に対して上下方向にずれ、試験中にリム間隙が変わることはない。

【0015】

【実施例】以下、本発明の一実施例を図面に基いて詳述する。なお、図4における部材と同一名称物には、同一の符号を付し、その説明を省略する。図1乃至図3は本発明の第一実施例を示す。図1において、上・下主軸1, 2には、上・下油圧ロック手段15, 16の他に、上・下リム13, 14の端部に係合して上・下リム13, 14の上・下動を規制する上・下油圧係合手段50, 51が設けられている。

【0016】上・下油圧係合手段50, 51は、図2及び図3にも示すように、上・下主軸1, 2に径方向に形成された周方向に複数個の油室52, 53と、この油室52, 53に径

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方向に出退自在に内嵌されたピストン54, 55とを備えている。各ピストン54, 55は四角形状の係合頭部56, 57を有し、その係合頭部56, 57の外端に、各上・下リム13, 14の端縁に係合する複数個の係合部58, 59が階段状に形成されている。各ピストン54, 55は、上・下主軸1, 2に螺合された抜止めボルト60, 61により抜止めされ、かつバネ62, 63により径方向の内方に付勢されている。

【0017】各油室52, 53は、上・下油圧ロック手段15, 16の油室17, 18に油路23, 24を介して連通すべく上・下主軸1, 2の中心部に形成された油圧経路64, 65に分岐路66, 67を介して接続されている。従って、上・下油圧係合手段50, 51は、上・下油圧ロック手段15, 16のロック動作に連動してピストン54, 55が径方向に出退する。

【0018】上記構成において、上・下リム13, 14間のリム間隙を設定する場合には、先ず図外のリム支持アームを上下動させて、例えば、上・下リム13, 14を図1の左側に示す点線位置にセットする。この時、例えば、上油圧係合手段50のピストン54に形成された係合頭部56の最上位の係合部58と上リム13の上端の間には数mm程度の間隙が上下方向にできる。次に油圧経路64から油圧を送り、上油圧ロック手段15の拡張リング19を径方向外方に拡張させ、この上油圧ロック手段15により上リム13を上主軸1にロックする。

【0019】同時に油圧経路64の圧油が分岐路66を経て上油圧係合手段50の油室52に送られるので、上油圧ロック手段15に連動してピストン54が径方向外方に突出し、その係合頭部58の外端が上リム13の内周に当接する。下リム14側も同様に下油圧ロック手段16で下主軸2にロックし、またこれに連動して下油圧係合手段51のピストン55を突出させ、その係合頭部57の外端を下リム14の内周に当接させておく。

【0020】タイヤTの試験に際しては、上・下リム13, 14間にタイヤTを装着した後、このタイヤT内に圧縮空気を入れて空気圧をかける。すると、その空気圧によって上・下リム13, 14に上下方向の力 F_1 ・ F_2 が作用し、上・下リム13, 14が数mm程度上下方向に撓動して係合部58, 59に係合し、上・下リム13, 14が所定位置に定まる。

【0021】従って、上・下油圧ロック手段15, 16は単なる滑り止め程度で良く、サイズも小さくなって所定部分に収まりやすくなり、全体を簡単かつコンパクトにできる。しかも上・下リム13, 14を確実に固定でき、上下のずれを防止できる。図4乃至図7は本発明の第2実施例を示す。上・下油圧ロック手段15, 16は、前記実施例に示す拡張自在な拡張リング17, 18を使用するものの他、図4乃至図6に示すように、油圧ピストンのものを用いても良い。

【0022】即ち、この上・下油圧ロック手段15, 16は、図4及び図5に示すように、上・下主軸1, 2に径方

向に形成された周方向に複数個の油室70, 71と、この油室70, 71に径方向に出退自在に内嵌され、かつロック時に上・下リム13, 14の内周側に当接するピストン72, 73とを備えている。各ピストン72, 73は、図6にも示すように四角形状の押圧頭部74, 75を有し、この押圧頭部74, 75の上・下リム13, 14に対する当接側にゴムライニング76, 77が装着されている。

【0023】各ピストン72, 73は上・下主軸1, 2に螺合された抜止めボルト78, 79により抜止めされ、かつパネ80, 81により径方向の内方に付勢されている。各油室70, 71は油路23, 24を介して油圧経路64, 65に接続されている。上・下リム13, 14を上・下主軸1, 2にロックする際には、油圧経路64, 65から上・下油圧ロック手段15, 16の油室70, 71に圧油を供給する。するとパネ80, 81に抗してピストン72, 73が径方向に外方に摺動し、その押圧頭部74, 75のゴムライニング76, 77が上・下リム13, 14の内周に当接し、上・下リム13, 14を内周側から押圧するので、上・下リム13, 14をロックできる。

【0024】この場合、油室70, 71に供給するゆあつを図7のように低圧と高圧とに圧力制御し、その低圧時に上・下リム13, 14を上・下主軸1, 2上で各係合部58, 59側に摺動させ、その所要部位に係合させれば、容易に上・下リム13, 14の間隙設定ができる。そして、その後、油室70, 71の油圧を高圧にすれば、上・下リム13, 14を上・下主軸1, 2に確実にロックできる。

【0025】この第2実施例の上・下油圧ロック手段15, 16を採用する場合、第1実施例に比べて次のような利点がある。つまり、拡張リング17, 18は約1mm程度の肉厚であるため、摩耗、疲労が生じやすく耐久性に劣る。また拡張リング17, 18の膨出時に、拡張リング17, 18の一部が上・下リム13, 14の内周に当り、当り面が一部になるため、上・下リム13, 14が上・下主軸1, 2廻りに回転する惧れがある。しかも、拡張リング17, 18の膨出が円周上で均一にならず、上・下リム13, 14の同心度が狂う惧れがある。

【0026】しかしながら、ピストン式の上・下油圧ロック手段15, 16を用いれば、耐久性にすぐれ、またロック時に各ピストン72, 73が均等に摺動するため、上・下リム13, 14を上・下主軸1, 2に対して同芯状に維持でき、上・下リム13, 14の芯ずれを防止できる。更にピストン72, 73には、上・下リム13, 14に当接するゴムライニング76, 77を装着しているため、ロック時の上・下リム13, 14の回転を防止できる。

【0027】

【発明の効果】本発明によれば、上・下油圧ロック手段15, 16と連動して径方向に出退し、上・下油圧ロック手段15, 16のロック時に上・下リム13, 14に係合する上・下油圧係合手段50, 51を上・下主軸1, 2に設けているので、上・下油圧ロック手段15, 16が単なる滑り止めで良く、全体を簡単かつ小型化できるにも拘らず、上・下リム13, 14を確実に固定してそのずれを防止できる。

【0028】また上・下油圧係合手段50, 51は、上・下主軸1, 2に径方向に出退自在に設けられた周方向に複数個のピストン54, 55を備え、各ピストン54, 55に、上・下リム13, 14に係合する係合部58, 59を設けているので、上・下リム13, 14を確実に係止できる。更に、上・下油圧ロック手段15, 16は、上・下主軸1, 2に径方向に出退自在に設けられ、かつロック時に上・下リム13, 14の内周側に当接する周方向に複数個のピストン73, 74を備えているので、上・下油圧ロック手段15, 16の耐久性が向上すると共に、ロック時における上・下リム13, 14の芯ずれを防止でき、同芯度が向上する。

【図面の簡単な説明】

【図1】本発明の第1実施例を示す断面図である。

【図2】同図1のA-A矢視拡大図である。

【図3】同係合頭部の正面図である。

【図4】本発明の第2実施例を示す断面図である。

【図5】同図4のB-B矢視拡大図である。

【図6】同押圧頭部の正面図である。

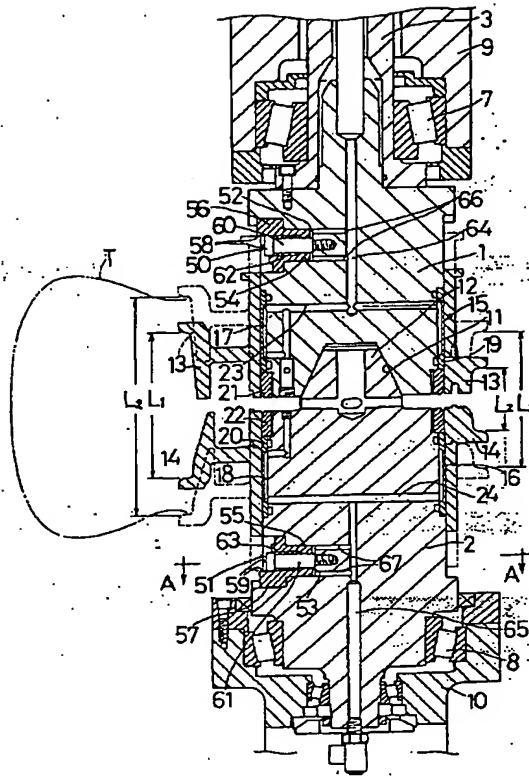
【図7】同油圧特性図である。

【図8】従来例を示す断面図である。

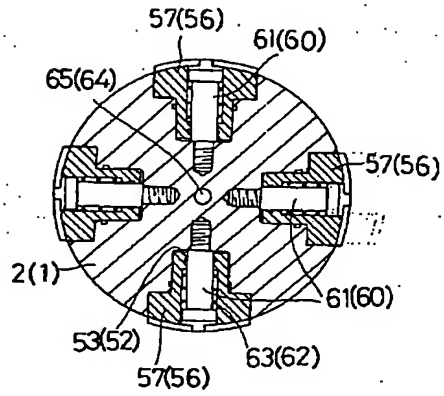
【符号の説明】

1	上主軸
2	下主軸
13	上リム
14	下リム
15	上油圧ロック手段
16	下油圧ロック手段
50	上油圧係合手段
51	下油圧係合手段
54	ピストン
55	ピストン
73	ピストン
74	押圧頭部
T	タイヤ

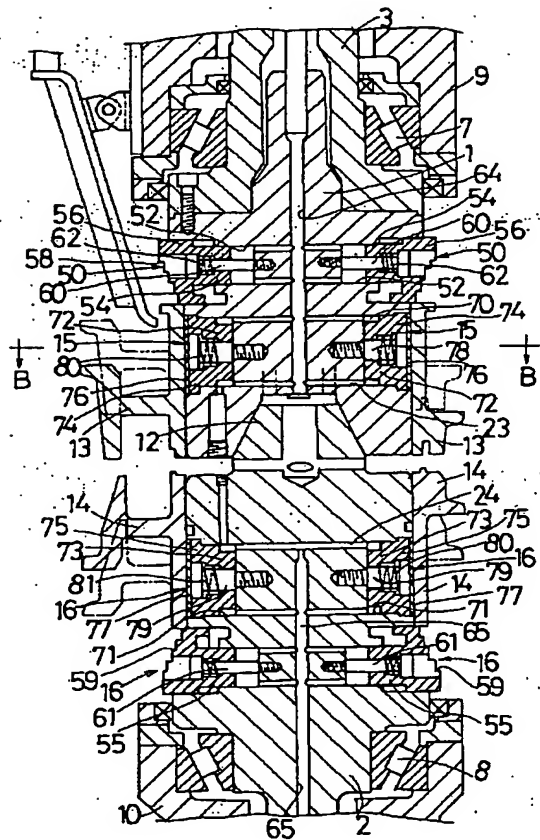
【図 1】



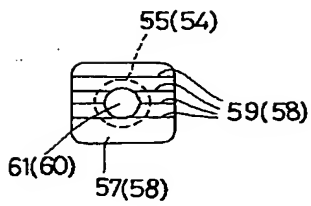
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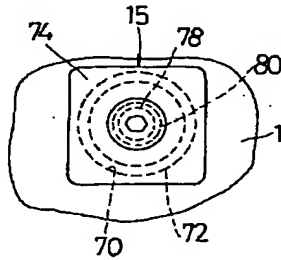
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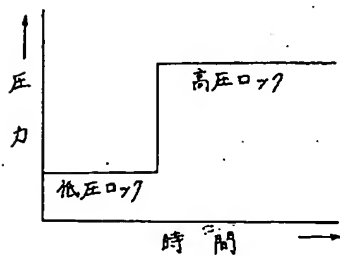
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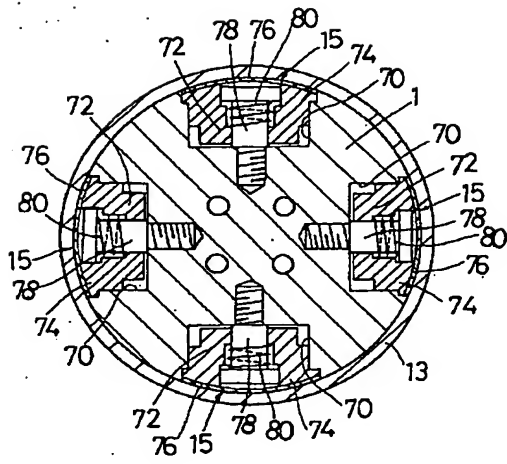
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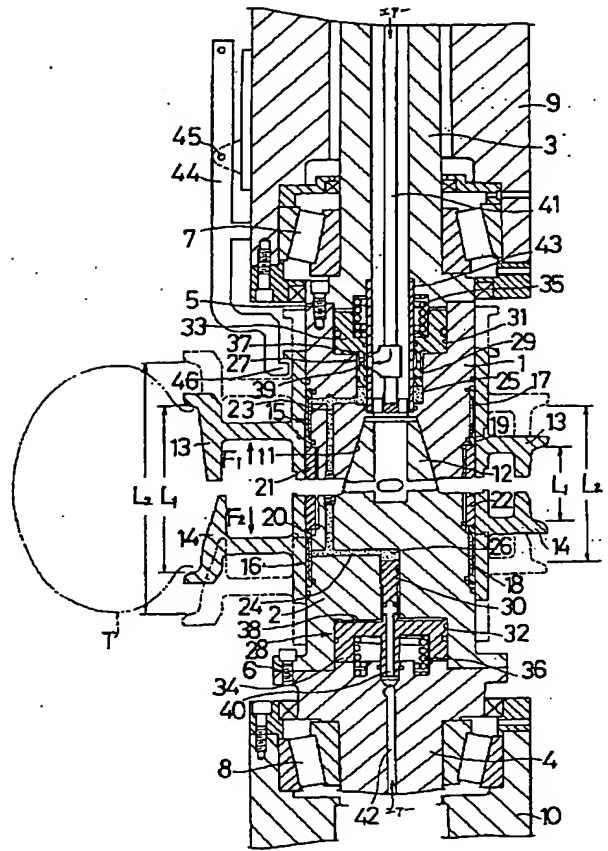
【図 7】



【図 5】



【図 8】



PATENT ABSTRACTS OF JAPAN

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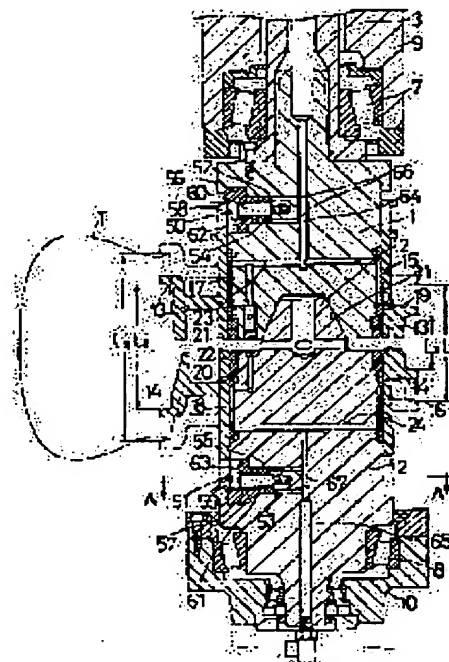
Priority number : 03 37561 Priority date : 04.03.1991 Priority country : JP

(54) RIM INTERVAL SETTING DEVICE FOR USE IN TIRE UNIFORMITY MACHINE

(57)Abstract:

PURPOSE: To prevent fluctuation of the interval between upper and lower rims during a test by firmly fixing the upper and lower rims to upper and lower main spindles, respectively.

CONSTITUTION: Upper and lower rims 13, 14 are fitted respectively around upper and lower main spindles 1, 2 in such a manner as being freely put in vertical motion. The upper and lower main spindles 1, 2 are provided with enlarging rings 19, 20 which lock the upper and lower rims 13, 14 from their respective inner peripheries and pistons 54, 55 having engaging portions for engagement with the upper and lower rims 13, 14, respectively. The enlarging rings 19, 20 are enlarged in their radial direction by pressure oil to lock the upper and lower rims 13, 14 to the upper and lower main spindles 1, 2. The pistons 54, 55 move in their radial direction in association with the enlarging and contracting of the respective enlarging rings 19, 20 and are engaged with the upper and lower rims 13, 14 when projected.



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CLAIMS

[Claim(s)]

[Claim 1] To the opposite edge of a vertical main shaft (1) and (2), it is a tire (T). While attaching the bottom rim (13) of - when equipping, and (14) free [vertical movement] In the tire uniformity machine which prepared the top for locking a top and a bottom rim (13), and (14) from inner circumference and a bottom oil pressure lock means (15), and (16) in a top and a bottom main shaft (1), and (2) A top and a bottom oil pressure lock means (15), and (16) are interlocked with, and come out in the direction of a path and it removes. The rim spacing setting device in the tire uniformity machine characterized by preparing the bottom oil pressure engagement means (50) of - when engaging with a top and a bottom rim (13), and (14) at the time of the lock of a top and a bottom oil pressure lock means (15), and (16), and (51) in a top and a bottom main shaft (1), and (2).

[Claim 2] A top and a bottom oil pressure engagement means (50), and (51) equip with two or more pistons (54) and (55) the hoop direction prepared in the direction of a path free [****] a top and a bottom main shaft (1), and (2). The rim gap setting device in the tire uniformity machine according to claim 1 characterized by preparing the engagement section (58) which engages with a top and a bottom rim (13), and (14), and (59) in each piston (54) and (55).

[Claim 3] A top and a bottom oil pressure lock means (15), and (16) are a rim gap setting device in the tire uniformity machine according to claim 1 or 2 characterized by equipping with two or more pistons (73) and (74) the hoop direction which is prepared in the direction of a path free [****] a top and a bottom main shaft (1), and (2), and contacts the inner circumference side of a top and a bottom rim (13), and (14) at the time of a lock.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the rim gap setting device in a tire uniformity machine.

[0002]

[Description of the Prior Art] A tire uniformity machine equips a top and a bottom main shaft with a tire through a top and a bottom rim, and it is made to perform pressing **** measurement for a roadwheel, rotating this tire to the circumference of the axial center of a main shaft. It sets in this tire uniformity machine, and they are a top and a bottom rim gap (L1-L2). As equipment which can be set up automatically, the thing as shown in drawing 8 is already considered.

[0003] That is, it sets to drawing 8 and is 1. An upper main shaft and 2 It is a bottom main shaft and they are these main shafts 1 and 2. They are a top and the bottom support shafts 3 and 4 so that phase opposite may be carried out up and down on the same axial center. They are bolts 5 and 6 to an opposite edge. It is attached. A top and the bottom support shafts 3 and 4 are bearing 7 and 8. It is supported free [rotation] in the bearing cases 9 and 10. And upper support shaft 3 A rotation drive is carried out by the drive motor outside drawing at the circumference of an axial center, and it is the bottom support shaft 4. It is supported free [rise and fall] by the rise-and-fall means outside drawing with the bearing case 10. Upper main shaft 1 In a lower limit, the fitting crevice 11 is the bottom main shaft 2. The fitting projected part 12 is formed in upper limit in the shape of a taper, respectively, and it is the bottom main shaft 2. When it is made to go up, both fit in and it is connected.

[0004] 13 is an upper rim, 14 is a bottom rim, and these are a top and the bottom main shafts 1 and 2. An oil pressure controller [side / inner circumference]-that periphery **** [and] detachably at vertical sliding list top, and bottom oil pressure lock means 15 and 16 It is fixed in the location of arbitration. In addition, a top and bottom rims 13 and 14 The thing of a different-species configuration is shown to right and left by drawing 8 , and they are each of these rims 13 and 14. It can reposition up and down between a continuous-line location and a dotted-line location. Therefore, the gap between a top and the bottom rim 13, and 14 can be set now as arbitration in L1 to L2 in this case.

[0005] A top and bottom oil pressure lock means 15 and 16 They are oil sacs 17 and 18 to inner circumference. Expanding-and-contracting rings 19 and 20 which have and can expand and contract freely It is constituted and they are these expanding-and-contracting rings 19 and 20. A top and bottom main shafts 1 and 2 It is attached and they are nuts 21 and 22. It is fixed. each oil sacs 17 and 18 Oilways 23 and 24 minding -- a top and bottom main shafts 1 and 2 Oil sacs 25 and 26 of a core open for free passage -- having -- the oil sacs 25 and 26 **** -- air cylinders 27 and 28 Rams 29 and 30 It is prepared.

[0006] Air cylinders 27 and 28 A top and bottom main shafts 1 and 2 Formed cylinder rooms 31 and 32 These cylinder rooms 31 and 32 Pistons 33 and 34 inner-*(ed) free [sliding] These pistons 33 and 34 Rams 29 and 30 of one It is constituted. And pistons 33 and 34 Rams 29 and 30 Oil sacs 25 and 26 They are springs 35 and 36 that an inner oil should be pressurized. It is energized and they are these springs 35 and 36. They are the Ayr rooms 37 and 38 in order to apply the Ayr ** so that it may resist. It is formed. Ayr rooms 37 and 38 Rams 29 and 30 etc. -- formed paths 39 and 40 from -- it connects with the source of Ayr outside drawing through piping 41 or a path 42.

[0007] Therefore, each air cylinders 27 and 28 Ayr rooms 37 and 38 If the Ayr ** is extracted, they will be springs 35 and 36. Pistons 33 and 34 and rams 29 and 30 It is pressed and they are oil sacs 25 and 26. In order

to pressurize an oil, Oil sacs 17 and 18 A pressure rises and they are the expanding-and-contracting rings 19 and 20. It expands to the method of the outside of the direction of a path, and they are a top and the bottom rims 13 and 14. It can lock from an inner circumference side. In addition, the ram 29 is ****(ed) by the sleeve 43.

[0008] 44 is a stop arm and is the bearing case 9. It is pivoted free [rocking] by the pin 45. And the engagement section 46 to which this stop arm 44 engages with the flange of the upper rim 13 free [engaging and releasing] is formed in the lower limit section, and the engaging-and-releasing actuation means is connected with the upper limit section. A top and bottom rims 13 and 14 A top and bottom oil pressure lock means 15 and 16 Expanding-and-contracting rings 19 and 20 By making it expand with oil pressure, they are a top and the bottom main shafts 1 and 2. It can lock from the inner circumference side. And a top and bottom rims 13 and 14 The rim gap of a between can be set up within the limits of L1-L2, and, thereby, it can respond now to modification of tire size promptly.

[0009]

[Problem(s) to be Solved by the Invention] By actual trial, it is Tire T. The compressed air is put in inside and it is set as the same conditions as the time of transit. for this reason, a top and bottom rims 13 and 14 **** -- the force F1 of the vertical direction and F2 act -- ***** -- these force F1 and F2 -- PC tire -- a maximum of 20 ton It can become. Therefore, expanding-and-contracting rings 19 and 20 Bottom oil pressure lock means 15 and 16 of - after using Tire T When introducing the compressed air inside, they are a top and the bottom rims 13 and 14. It shifts and there is a problem that a rim gap changes. As this cure, they are a top and the bottom oil pressure lock means 15 and 16. Although strengthening the fixed force is also considered, since the lock method by frictional resistance is taken, there is a limitation on structure.

[0010] In view of this technical problem, this invention certainly fixes a top and a bottom rim in the setting location of a rim gap, and offers the bottom rim gap setting device of - when fluctuation of a rim gap can be prevented.

[0011]

[Means for Solving the Problem] This invention is a top and the bottom main shafts 1 and 2. To an opposite edge, it is Tire T. Bottom rims 13 and 14 of - when equipping While attaching free [vertical movement] A top and bottom rims 13 and 14 The top for locking from inner circumference, and bottom oil pressure lock means 15 and 16 A top and bottom main shafts 1 and 2 In the formed tire uniformity machine A top and bottom oil pressure lock means 15 and 16 It interlocks, and it comes out in the direction of a path, and removes, and they are a top and the bottom oil pressure lock means 15 and 16. They are a top and the bottom rims 13 and 14 at the time of a lock. Bottom oil pressure engagement means 50 and 51 of - when engaged A top and bottom main shafts 1 and 2 It prepares.

[0012] A top and bottom oil pressure engagement means 50 and 51 Pistons 54 and 55 of plurality [hoop direction / which was prepared in the direction of a path free / **** / at a top and the bottom main shafts 1 and 2] It has and they are each pistons 54 and 55. A top and bottom rims 13 and 14 The engaged engagement sections 58 and 59 It is prepared. A top and bottom oil pressure lock means 15 and 16 A top and bottom main shafts 1 and 2 It is prepared in the direction of a path free [****], and they are a top and the bottom rims 13 and 14 at the time of a lock. Pistons 73 and 74 of plurality [hoop direction / which contacts an inner circumference side] It has. And it lines in the receiving contact side. It is prepared.

[0013]

[Function] A top and bottom rims 13 and 14 A top and bottom oil pressure lock means 15 and 16 after making it move up and down and adjusting and setting up a rim gap A pressure oil is supplied and they are pistons 73 and 74. It is made to project. Then, pistons 73 and 74 A top and bottom rims 13 and 14 It contacts from an inner circumference side and they are this top and the bottom rims 13 and 14. A top and bottom main shafts 1 and 2 It locks from inner circumference. Therefore, a top and bottom rims 13 and 14 A top and bottom main shafts 1 and 2 It can certainly lock.

[0014] At this time, they are a top and the bottom oil pressure engagement means 50 and 51. Pistons 54 and 55 A top and bottom oil pressure lock means 15 and 16 It interlocks and they are a projection and its pistons 54 and 55. Engagement sections 58 and 59 A top and bottom rims 13 and 14 It is engaged. Therefore, tire T Even if it applies pneumatic pressure, they are a top and the bottom rims 13 and 14. A top and bottom main shafts 1 and 2 It receives, and shifts in the vertical direction and a rim gap does not change during a trial.

[0015]

[Example] Hereafter, one example of this invention is explained in full detail based on a drawing. In addition, the same sign is given to the same name object as the member in drawing 4, and the explanation is omitted. Drawing 1 thru/or drawing 3 show the first example of this invention. drawing 1 -- setting -- a top and bottom main shafts 1 and 2 **** -- a top and bottom oil pressure lock means 15 and 16 others -- the edge of a top and the bottom rims 13 and 14 -- being engaged -- a top and bottom rims 13 and 14 Bottom oil pressure engagement means 50 and 51 of - when regulating a top and bottom ** It is prepared.

[0016] A top and bottom oil pressure engagement means 50 and 51 Oil sacs 52 and 53 of plurality [hoop direction / which was formed in the direction of a path at a top and the bottom main shafts 1 and 2 as shown also in drawing 2 and drawing 3 R> 3] These oil sacs 52 and 53 Pistons 54 and 55 inner-**(ed) free [****] in the direction of a path It has. Each pistons 54 and 55 Square-like engagement heads 56 and 57 It has and they are the engagement heads 56 and 57. To an outer edge, they are each up and bottom rims 13 and 14. Two or more engagement sections 58 and 59 which engage with the edge It is formed stair-like. Each pistons 54 and 55 A top and bottom main shafts 1 and 2 Screwed ***** 60 and 61 It ***** and they are springs 62 and 63. It is energized by the way among the directions of a path.

[0017] Each oil sacs 52 and 53 A top and bottom oil pressure lock means 15 and 16 Oil sacs 17 and 18 Oilways 23 and 24 They are a top and the bottom main shafts 1 and 2 open for free passage [mind and]. Oil pressure paths 64 and 65 formed in the core Fork roads 66 and 67 It minds and connects. Therefore, a top and bottom oil pressure engagement means 50 and 51 A top and bottom oil pressure lock means 15 and 16 Lock actuation is interlocked with and they are pistons 54 and 55. Removed ** which comes out of in the direction of a path.

[0018] It sets in the above-mentioned configuration and they are a top and the bottom rims 13 and 14. In setting up the rim gap of a between, it moves the rim support arm outside drawing up and down first, for example, they are a top and the bottom rims 13 and 14. It sets to the dotted-line location shown in the left-hand side of drawing 1. An about several mm gap is made in the vertical direction between the top engagement section 58 at this time 56, for example, the engagement head formed in the piston 54 of the upper oil pressure engagement means 50, and the upper limit of the upper rim 13. Next, the method of the outside of the direction of a path is made to expand the diameter of the expanding-and-contracting ring 19 of delivery and the upper oil pressure lock means 15 for oil pressure from the oil pressure path 64, and it is the upper main shaft 1 about the upper rim 13 by this upper oil pressure lock means 15. It locks.

[0019] Since the pressure oil of the oil pressure path 64 is sent to the oil sac 52 of the upper oil pressure engagement means 50 through a fork road 66 at coincidence, the upper oil pressure lock means 15 is interlocked with, a piston 54 contacts the method of the outside of the direction of a path, and the outer edge of a projection and its engagement head 58 contacts the inner circumference of the upper rim 13. The bottom rim 14 side is the bottom main shaft 2 with the bottom oil pressure lock means 16 similarly. Lock, and this is interlocked with, the piston 55 of the bottom oil pressure engagement means 51 is made to project, and the outer edge of the engagement head 57 is made to contact the inner circumference of the bottom rim 14.

[0020] Tire T A trial is faced and they are a top and the bottom rims 13 and 14. It is Tire T in between. This tire T after equipping The compressed air is put in inside and pneumatic pressure is applied to it. Then, they are a top and the bottom rims 13 and 14 by the pneumatic pressure. The force F1 of the vertical direction and F2 act, and they are a top and the bottom rims 13 and 14. It slides in the vertical direction about several mm, and they are the engagement sections 58 and 59. It is engaged and they are a top and the bottom rims 13 and 14. It becomes settled in a predetermined location.

[0021] Therefore, a top and bottom oil pressure lock means 15 and 16 It is good at mere skid extent, and size also becomes small, and becomes easy to be settled in a predetermined part, and the whole is made as for it to easy and a compact. And a top and bottom rims 13 and 14 It can certainly fix and a gap of the upper and lower sides can be prevented. Drawing 4 thru/or drawing 7 show the 2nd example of this invention. A top and bottom oil pressure lock means 15 and 16 Expanding-and-contracting rings 17 and 18 which are shown in said example and which can be expanded and contracted Although it is used, as shown in others, drawing 4, or drawing 6, the thing of an oil pressure piston may be used.

[0022] Namely, this top and bottom oil pressure lock means 15 and 16 As shown in drawing 4 and drawing 5, they are a top and the bottom main shafts 1 and 2. Oil sacs 70 and 71 of plurality [hoop direction / which was formed in the direction of a path] These oil sacs 70 and 71 It inner-** free [****] in the direction of a path, and they are a top and the bottom rims 13 and 14 at the time of a lock. Pistons 72 and 73 which contact an inner

circumference side It has. Each pistons 72 and 73 As shown also in drawing 6 , they are the square-like press heads 74 and 75. It has and they are these press heads 74 and 75. A top and bottom rims 13 and 14 The receiving contact side is equipped with rubber linings 76 and 77.

[0023] Each pistons 72 and 73 A top and bottom main shafts 1 and 2 Screwed ***** 78 and 79 It ***** and is energized by the way among the directions of a path with springs 80 and 81. Each oil sacs 70 and 71 are oilways 23 and 24. It minds and they are the oil pressure paths 64 and 65. It connects. A top and bottom rims 13 and 14 A top and bottom main shafts 1 and 2 It faces locking and they are a top and the bottom oil pressure lock means 15 and 16 from the oil pressure paths 64 and 65. A pressure oil is supplied to oil sacs 70 and 71. Then, springs 80 and 81 It resists and they are pistons 72 and 73. It slides in the direction of a path at the method of outside, and they are the press heads 74 and 75. Rubber linings 76 and 77 A top and bottom rims 13 and 14 Inner circumference is contacted and they are a top and the bottom rims 13 and 14. Since it presses from an inner circumference side, they are a top and the bottom rims 13 and 14. It can lock.

[0024] In this case, oil sacs 70 and 71 Pressure control of the ***** to supply is carried out to low voltage and high pressure like drawing 7 , and they are a top and the bottom rims 13 and 14 at the time of that low voltage. A top and bottom main shafts 1 and 2 They are each engagement sections 58 and 59 in a top. If a side is slid and it is made to engage with that necessary part, they will be a top and the bottom rims 13 and 14 easily. A gap setup can be performed. And after that and oil sacs 70 and 71 If oil pressure is made into high pressure, they will be a top and the bottom main shafts 1 and 2 about a top and the bottom rims 13 and 14. It can certainly lock.

[0025] This 2nd example top and bottom oil pressure lock means 15 and 16 When adopting, there are the following advantages compared with the 1st example. That is, expanding-and-contracting rings 17 and 18 Since it is the thickness of about 1mm, it is [that it is easy to produce wear and fatigue] inferior to endurance. Moreover, expanding-and-contracting rings 17 and 18 At the time of bulge, they are the expanding-and-contracting rings 17 and 18. A part is a top and the bottom rims 13 and 14. Since a working face becomes in part in inner circumference, they are a top and the bottom rims 13 and 14. A top and bottom main shafts 1 and 2 There is **** which rotates around. And expanding-and-contracting rings 17 and 18 Bulge does not become homogeneity on a periphery but they are a top and the bottom rims 13 and 14. There is **** in which concentricity is out of order.

[0026] However, a piston type top and bottom oil pressure lock means 15 and 16 If it uses, it excels in endurance, and they are each pistons 72 and 73 at the time of a lock. In order to slide equally, they are a top and the bottom rims 13 and 14. A top and bottom main shafts 1 and 2 It receives, and can maintain concentrically and they are a top and the bottom rims 13 and 14. A heart gap can be prevented. furthermore, pistons 72 and 73 **** -- a top and bottom rims 13 and 14 Contacting rubber linings 76 and 77 since it has equipped -- the top at the time of a lock, and bottom rims 13 and 14 Rotation can be prevented.

[0027]

[Effect of the Invention] According to this invention, they are a top and the bottom oil pressure lock means 15 and 16. Interlock, and come out in the direction of a path and it removes. A top and bottom oil pressure lock means 15 and 16 They are a top and the bottom rims 13 and 14 at the time of a lock. Bottom oil pressure engagement means 50 and 51 of - when engaged A top and bottom main shafts 1 and 2 Since it has prepared a top and bottom oil pressure lock means 15 and 16 a mere skid may be used and easy in the whole -- and -- in spite of being able to miniaturize -- a top and bottom rims 13 and 14 It certainly fixes and the gap can be prevented.

[0028] Moreover, a top and bottom oil pressure engagement means 50 and 51 A top and bottom main shafts 1 and 2 Pistons 54 and 55 of plurality [hoop direction / which was prepared in the direction of a path free / ****] It has and they are each pistons 54 and 55. A top and bottom rims 13 and 14 The engaged engagement sections 58 and 59 Since it has prepared, they are a top and the bottom rims 13 and 14. It can stop certainly. furthermore, a top and bottom oil pressure lock means 15 and 16 A top and bottom main shafts 1 and 2 It is prepared in the direction of a path free [****], and they are a top and the bottom rims 13 and 14 at the time of a lock. Pistons 73 and 74 of plurality [hoop direction / which contacts an inner circumference side] Since it has A top and bottom oil pressure lock means 15 and 16 Bottom rims 13 and 14 of - [top] at the time of a lock while endurance improves A heart gap can be prevented and the degree of the said heart improves.

[Translation done.]

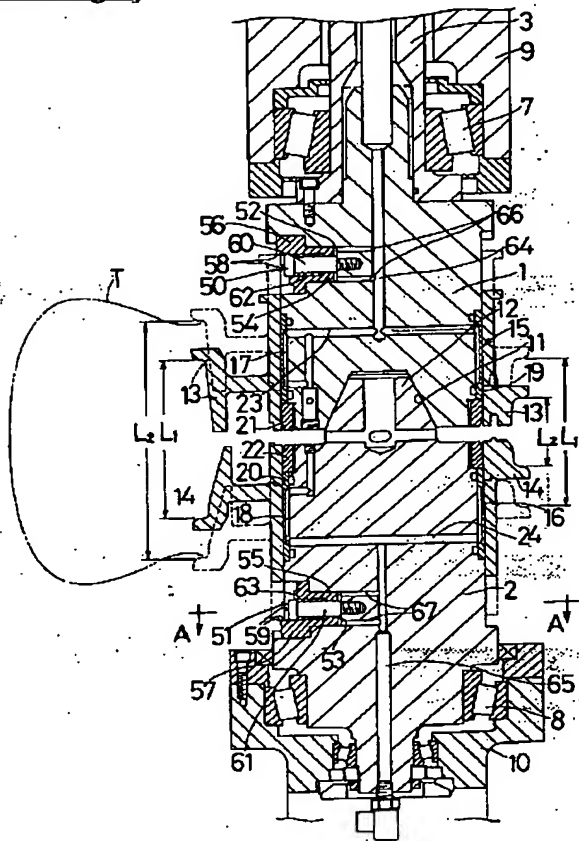
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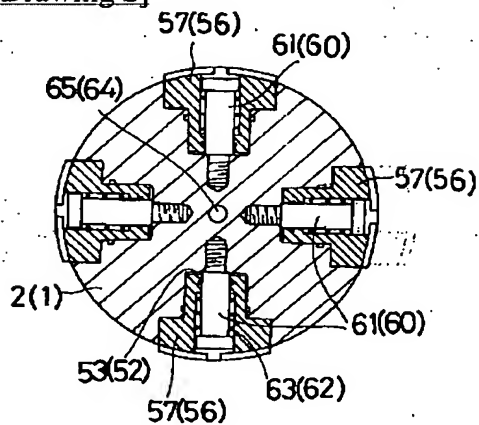
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DRAWINGS

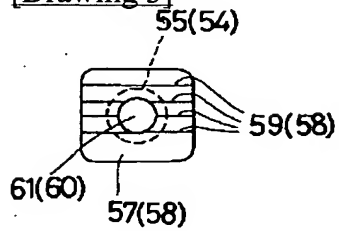
[Drawing 1]



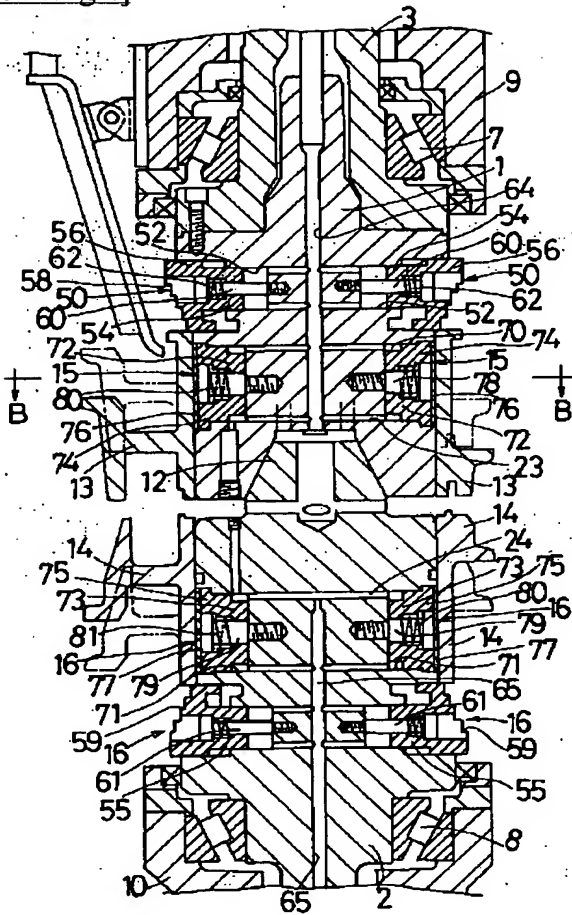
[Drawing 2]



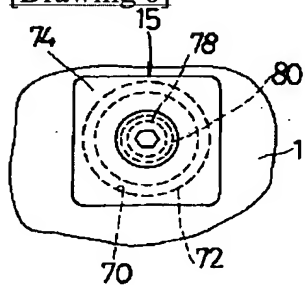
[Drawing 3]



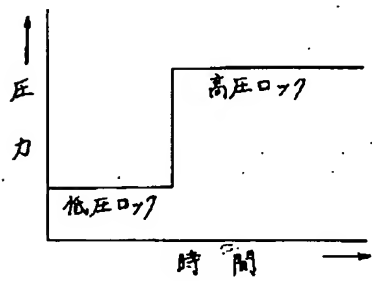
[Drawing 4]



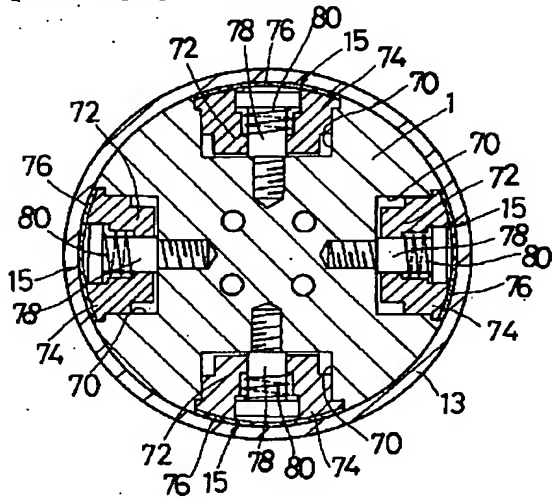
[Drawing 6]



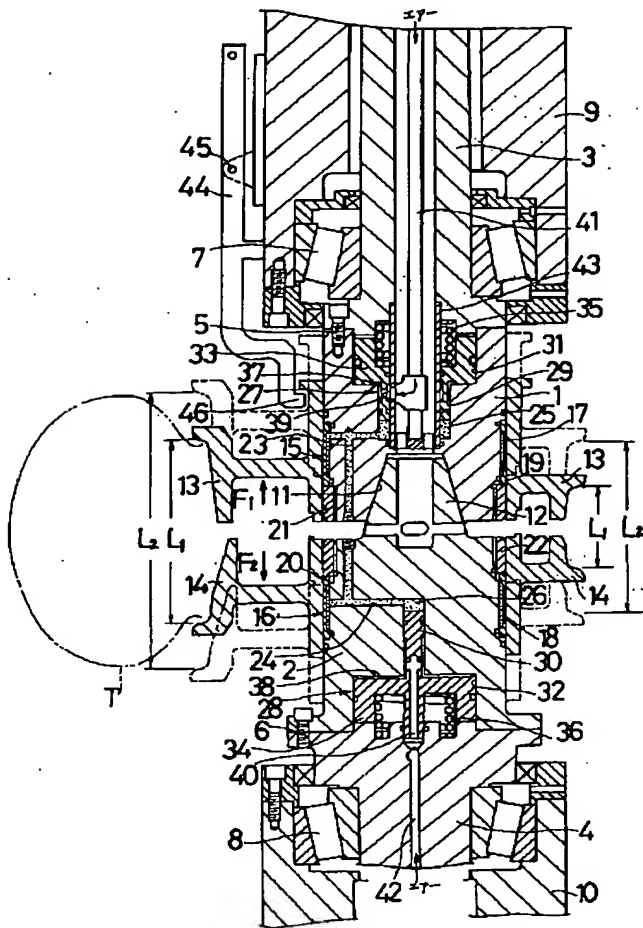
[Drawing 7]



[Drawing 5]



[Drawing 8]



[Translation done.]